



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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July 23, 1996

Elaine J. Dorward-King Ph.D.
Director, Environmental Affairs
Kennecott Utah Copper Corporation
8315 West 3595 South
P.O. Box 6001
Magna, Utah 84044-6001

Re: Review of Dry Fork Permit Amendment, Kennecott Utah Copper Corporation
(KUCC), Bingham Canyon Mine, M/035/002, Salt Lake County, Utah

Dear Ms. Dorward-King:

The Division has completed a review of your latest Dry Fork project amendment for the Bingham Canyon Mine, located in Salt Lake County, Utah, which was received May 3, 1996. As you know, the Bingham Canyon Mine has a "permit boundary" which differs from the impacted "disturbed area boundary". Under the Dry Fork permit amendment, KUCC is proposing to add approximately 600 acres to the Bingham Canyon "permit boundary" and increase the disturbed area by approximately 34.3 acres. A portion of the disturbance associated with this project is within the existing "permit boundary" and was not included as "new disturbance" by KUCC in this proposal. KUCC asserts that only those disturbances located outside of the present permit boundary are not currently permitted. KUCC has provided detailed information for the portions of this proposal which are outside of the current permit boundary; however, features which are associated with this project but located within the existing permit boundary are not described in detail. The disturbances associated with this project both within and outside the present permit boundary are not specifically described in the approved 1978 mining and reclamation plan for the Bingham Canyon Mine.

For future reference, new disturbances or revised operations within an approved "permit boundary" which have not been formally approved as part of the "disturbed area" are subject to Division review. Please keep the Division apprised of new surface disturbances and/or revised operations within the permit boundary in the future.

The Division has determined this proposal to be an "amendment" to the existing Bingham Canyon Large Mine Operations Notice of Intention rather than a "revision." This determination was made using the criteria for defining permit amendments and revisions developed by the Division effective May 22, 1991. After reviewing the information, the Division has the following comments which will need to be addressed before tentative approval may be granted. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.



0002

R647-4-105 - Maps, Drawings & Photographs

105.2 Surface facilities map

Please provide an updated surface facilities map of the Bingham Canyon Mine permit area. This map or series of maps should be of a scale of approximately 1 inch to 500 feet.. The map(s) should include all features described under sections R647-4-105 (1) and (2) of the Minerals Rules. Please include the amendment areas on the updated map(s).

R647-4-106 - Operation Plan

106.2 Type of operations conducted, mining method, processing etc.

During a May 28, 1996, onsite inspection of Dry Fork Canyon project area, KUCC personnel informed Division staff that one of the primary reasons KUCC was requesting an expeditious review of the new access road was to provide a corridor for the construction of a new, realigned power line. The present power line leading down to the pumps within the Queen Mary Reservoir will be decommissioned due to the encroachment of the Dry Fork waste dumps. The latest Dry Fork amendment does not discuss this power line or show its relocation on any of the plan drawings. Is this an oversight or have KUCC's plans changed regarding this power line? The permit amendment and appropriate drawings should be revised accordingly.

On Drawing No. 603-C-1200, Clean Water Collection Plan, a *clean water production well* is shown at the north end of the topsoil stockpile located between the two water storage dams. There is no explanation or reference to this production well in the text of the Dry Fork permit amendment. What is the intended use of this water well? Has the appropriate clearance been obtained from the State Engineers Office for drilling this well? How does it relate to and fit into the basic water management plan for the storage and rerouting of excess undisturbed drainage originating from upper Dry Fork Canyon?

106.5 Existing soil types, location, amount

Please provide a description of the soils to be salvaged. At a minimum, this is to include Texture, pH, EC (conductivity) SAR, Cation Exchange Capacity, Nitrate nitrogen, Total nitrogen, Phosphorus and Potassium

106.6 Plan for protecting & redepositing soils

The plan indicates that topsoil piles will be constructed with a 3v:1h slope and ripped perpendicular to the slope. For clarity, we interpret this to mean that the slopes will be ripped *along the contour*. This will help minimize erosion and sediment loss from the stockpiled topsoil.

R647-4-110 - Reclamation Plan

110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Please clarify the wording and intent of the last sentence under this section; *"It should be noted that access road cut and fill slopes with existing soil will be seeded upon completion of the access road."* Does this mean that the access road cut and fill slopes will be retopsoiled only if they have salvageable topsoil existing prior to actual excavation of the road?

110.3 Description of facilities to be left (post mining use)

KUCC proposes that the new access road, the clean water impoundments and the new pipeline be allowed to remain indefinitely as part of KUCC's post mining water management plans. The Mined Land Reclamation Act does not contemplate the continued post mining use of mine facilities that will require monitoring and maintenance by the mine operator for an indefinite time period. Therefore, the Division will require that KUCC reclaim the access road and the clean water ponds, when it is determined that these facilities are no longer required as part of the long term water management program. The buried clean water pipeline will also need to be permanently sealed when no longer necessary to transport water from these impoundments. The permit amendment will need to be modified to describe the final reclamation plans for these structures.

110.5 Revegetation planting program

The species identified for reclamation are acceptable; however, the rates for slender wheatgrass, western wheatgrass and thickspike wheatgrass (@ 6.5 lbs PLS/acre each) are extremely high and will out compete most of the shrubs and forbs in the seed mix. It is recommended that the rates for these three grasses be reduced to 2.5 lbs PLS/acre for each.

In the discussion on fertilization, it is unclear how fertilizer (if needed) would be applied. For clarification, fertilizer should not be applied with the seed, especially if hydroseeding is used. Also, the type and rate of fertilizer needs

to be identified. This cannot be done until the soil analysis requested under R647-4-106.6 is submitted.

R647-4-111 - Reclamation Practices

111.1.13 The Dry Fork permit amendment should include a description and/or commitment to ultimately reclaim/plug the proposed water production well in accordance to the requirments of the State Engineers Office or the requirements of R647-4-108.

111.12 Topsoil redistribution

It is assumed that any excess topsoil not used for reclamation of the Dry Fork Canyon project amendment will be used for reclamation of other areas of the Bingham Canyon Mine. To what depth will the topsoil be reapplied on the disturbed areas? The disposition of this topsoil needs to be made clear.

R647-4-112 - Variance

No variance requests were included within the permit amendment application, although the text of the application would infer that some are necessary. Specifically, KUCC has requested that the Division allow certain mining related facilities (i.e., new access road, clean water ponds and water pipeline) to remain indefinitely, upon termination of mining operations. This would require a formal variance request to the reclamation performance standards of Rules R647-4-111.8, -111.9, -111.11, -111.12 and -111.13. Because the Division does not accept KUCC's request for an indefinite time period for the continued use of the clean water ponds and access road without reclamation there is no need for additional variance information at this time.

R647-4-113 - Surety

KUCC has requested that the posting of a reclamation surety for this project be waived. KUCC proposes this waiver because the disturbances associated with this project would be included in the annual reclamation activities required by the Board Contract. The Board Contract for the 1978 permit requires KUCC to expend a minimum of \$50,000 (1978 dollars) per year on reclamation or reclamation research directly related to ultimate reclamation of the Bingham Canyon Mine disturbances. Because the Division does not accept KUCC's request for an indefinite time period for the continued use of the clean water ponds and access road without reclamation, a reclamation estimate will be needed and a reclamation surety will need to be posted. A Reclamation Contract (FORM MR-RC) will also need to be filed with the Division covering the reclamation requirements for all new disturbances associated with this permit amendment. The Division has prepared a draft reclamation cost estimate for this project which totals \$90,300 in year 2001 dollars (copy

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Elaine Dorward-King
M/035/002
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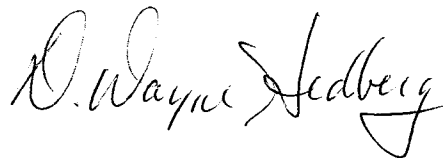
enclosed). Please review this draft estimate and provide us with any comments or corrections. Please inform us of the type of reclamation surety KUCC wishes to post so we may forward the appropriate forms to you.

R647-4-116 - Public Notice & Appeals

The processing of an Amendment does not require a public notice period by the Division. However, the posting of a new form or amount of reclamation surety will require approval of the Board of Oil, Gas and Mining at one of their monthly Board Hearings.

The Division will suspend further review of this amendment until your response to this letter is received. If you have any questions in this regard please contact me, Tony Gallegos, Lynn Kunzler, or Tom Munson of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation.

Sincerely,



D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
Enclosure: DOGM draft surety estimate of 7/22/96
cc: Jon Cherry, KUCC
Lowell Braxton, Deputy Director
Minerals staff (route)
M035002.amd

RECLAMATION ESTIMATE

DRAFT

last revision

07/22/96

Kennecott Utah Copper Corporation

filename M35-02.wb2

page "dry fork"

Bingham Canyon Mine - DRY FORK AMENDMENT

M/035/002 Salt Lake County

Prepared by Utah State Division of Oil, Gas & Mining

Details of Final Reclamation

- This is an estimate for reclamation of the DRY FORK AMENDMENT SECTION 10 ONLY
- The amendment enlarges the permit boundary to include section 10 except the sw1/4 sw 1/
- The Dry Fork project will disturb 33.7 acres; 9 acres are in the existing permit boundary
- Entire access road disturbance is 23.7 acres; access road in sec 10 only is 14.6 acres
- Clean water dam, coffer dam, rock quarry, & topsoil stockpile will disturb 8 acres in sec 10
- The access road topsoil stockpile will disturb approximately 2 acres in sec 10
- Clean water dam & spillway will disturb 2 acres in sec.11 (inside existing permit boundary)
- A safety berm/drainage control structure will disturb additional acreage in section 11
- Impounding structures to be regraded to be nonimpounding\
- KUC plans to concurrently reclaim disturbances associated with this project
- The access road (14.6 acres), cofferdam & clean water dam (8 acres), & topsoil stockpile (2 acres) will not be concurrently reclaimed
- Estimated total disturbance for Dry Fork Amendment = 33.7 acres
- Estimated disturbance for Dry Fork Amendment in sec 10 only = 24.6 acres

<u>activity</u>	<u>quantity</u>	<u>units</u>	<u>\$/unit</u>	<u>\$</u>
Road regrading	7,310	LF	1.85	13,524
Reservoir regrading to nonimpounding	10,300	CY	0.40	4,120
Coffer dam regrading to nonimpounding	2,300	CY	0.40	920
Plugging clean water pipeline	1	sum	400	400
Removal/burial of intake & outlet structure	1	sum	1,000	1,000
Topsoil placement	66,232	CY	0.60	39,739
Seeding disturbed areas	24.6	acre	285	7,011
Mobilization	4	equip	1,000	4,000
Supervision	10	days	160	1,600
		Subtotal		\$72,314
add 10% contingency				7,231
		Subtotal		\$79,545
Escalate for 5 years at 2.58% per year				10,805
		Total		\$90,350

Rounded surety amount in yr 2001-\$**\$90,300**

Average cost per acre (sec 10 only) =

\$3,671